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ABSTRACT

The goal of this panel was to recommend research that would identify factors affecting recruitment, selection, and retention of teachers and means of improving these processes. The panel also attempted to plan exemplary research and development activities for devising, validating, and installing methods for improving individuals' and institutions' decisions at critical points in a teacher's career. The panel attempted to relate recruitment, selection, and retention processes to one another and to discuss their interdependency. Much of the discussion centered on the role of research in determining values and priorities which school systems place on possible educational outcomes and how school systems differ in their educational goals. The panel also discussed the effect of the job market on recruitment and selection. The panel formulated six approaches for research and development within the general area of recruitment, selection, and retention which were proposed and considered on the basis of the sequence of activities or decision points in a teaching career. These approaches were concerned with analyzing and improving methods for recruiting teachers and teacher trainees, methods for selecting teacher trainees and teachers, methods for teacher placement and orientation, and the supervision and inservice education of teachers. They also dealt with investigating the relationship of teacher preparation objectives and curriculum to teacher competency and effectiveness, and the decision-making processes underlying position changes in teaching. (BD)

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NIE CONFERENCE ON STUDIES IN TEACHING

PANEL 1

RECRUITMENT, SELECTION, AND RETENTION

GOAL STATEMENT

To recommend research that will identify the factors affecting recruitment, selection, and retention of teachers and the means of improving these processes;

To plan exemplary research and development activities for devising, validating, and installing methods for improving individuals' and institutions' decisions at critical points in a teacher's career.

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nie conference on studies in teaching

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PREFACE

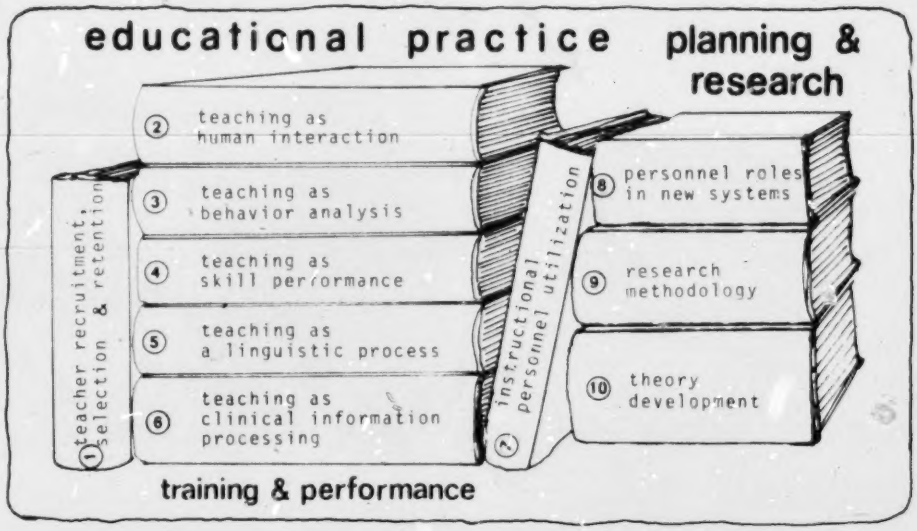
The volume before you is the report of one of ten panels that participated in a five-day conference in Washington during the summer of 1974. The primary objective of this Conference was to provide an agenda for further research and development to guide the Institute in its planning and funding over the next several years. Both by the involvement of some 100 respected practitioners, administrators, and researchers as panelists, and by the public debate and criticism of the panel reports, the Institute aims to create a major role for the practitioner and research communities in determining the direction of government funding.

The Conference itself is seen as only an event in the middle of the process. In many months of preparation for the Conference, the staff met with a number of groups--students, teachers, administrators, etc.--to develop coherent problem statements which served as a charge to the panelists. Panel chairmen and others met both before and after the Conference. Several other panelists were commissioned to pull together the major themes and recommendations that kept recurring in different panels (being reported in a separate Conference Summary Report). Reports are being distributed to practitioner and research communities. The Institute encourages other interest groups to debate and critique relevant panel reports from their own perspectives.

The Conference rationale stems from the frank acknowledgment that much of the funding for educational research and development projects has not been coordinated and sequenced in such a way as to avoid undue duplication yet fill significant gaps, or in such a way as to build a cumulative impact relevant to educational practice. Nor have an agency's affected constituencies ordinarily had the opportunity for public discussion of funding alternatives and proposed directions prior to the actual allocation of funds. The Conference is thus seen as the first major Federal effort to develop a coordinated research effort in the social sciences, the only comparable efforts being the National Cancer Plan and the National Heart and Lung Institute Plan, which served as models for the present Conference.

As one of the Conference panels points out, education in the United States is moving toward change, whether we do anything about it or not. The outcomes of sound research and development--though enlisting only a minute protion of the education dollar--provide the leverage by which such change can be afforded coherent direction.

In implementing these notions for the area of teaching, the Conference panels were organized around the major points in the career of a teacher: the teacher's recruitment and selection (one panel), training (five panels), and utilization (one panel). In addition, a panel was formed to examine the role of the teacher in new instructional systems. Finally, there were two panels dealing with research methodology and theory development.



Within its specific problem area, each panel refined its goal statement, outlined several "approaches" or overall strategies, identified potential "programs" within each approach, and sketched out illustrative projects so far as this was appropriate and feasible.

Since the brunt of this work was done in concentrated sessions in the space of a few days, the resulting documents are not polished, internally consistent, or exhaustive. They are working papers, and their publication is intended to stimulate debate and refinement. The full list of panel reports is given on the following page. We expect serious and concerned readers of the reports to have suggestions and comments. Such comments, or requests for other panel reports, should be directed to:

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As the organizer and overall chairman for the Conference and editor for this series of reports, Professor N. L. Gage of Stanford University richly deserves the appreciation of those in the field of teaching research and development. The panel chairpersons, singly and together, did remarkable jobs with the ambitious charge placed before them. Special acknowledgments are due to Philip Winne of Stanford University and to Arthur Young & Company for coordination and arrangements before, during, and after the Conference. But in sum toto, it is the expert panelists--each of whom made unique contributions in his or her respective area--who must be given credit for making the Conference productive up to the presert stage. It is now up to the reader to carry through the refinement that the panelists have placed in your hands.

Garry L. McDaniels
Program on Teaching and Curriculum

LIST OF PANEL REPORTS AND CHAIRPERSONS

1. Teacher Recruitment, Selection, and Retention, Dr. James Deneen, Educational Testing Service
2. Teaching as Human Interaction, Dr. Ned A. Flanders, Far West Laboratory for Educational Research and Development
3. Teaching as Behavior Analysis, Dr. Don Bushell, Jr., University of Kansas
4. Teaching as Skill Performance, Dr. Richard Turner, Indiana University.
5. Teaching as a Linguistic Process in a Cultural Setting, Dr. Courtney Cazden, Harvard University
6. Teaching as Clinical Information Processing, Dr. Lee S. Shulman, Michigan State University
7. Instructional Personnel Utilization, Dean Robert Egbert, University of Nebraska
8. Personnel Roles in New Instructional Systems, Dr. Susan Meyer Markle, University of Illinois
9. Research Methodology, Dr. Andrew Porter, Michigan State University
10. Theory Development, Dr. Richard Snow, Stanford University

- Conference on Studies in Teaching: Summary Report, Dr. N. L. Gage, Stanford University

INTRODUCTION

For some thirty years prior to 1970, school districts recruited and selected teachers in a seller's market. Recruitment and selection measures focused on two areas: the candidate's availability, and his or her possession of appropriate certification. Even the latter criterion frequently had to be waived if classrooms were to be staffed.

Today, the market for teachers is radically different. At least a quarter of a million certified teachers are seeking fulltime employment. Because graduating classes of teacher education institutions still total around 200,000 yearly, the supply of teachers continues to expand dramatically.

Given this surplus, teacher educators and employers can now be more selective in admitting teacher trainees and teachers into training opportunities and employment. Thus, research on teacher recruitment, selection, and retention must address two fundamental questions. How can we identify the best teachers and the best potential teachers? How can we attract and retain the best teachers and teacher trainees?

The research problem raised in the first question is essentially that of determining the criteria against which recruitment, selection, and retention decisions can be made in a valid manner. These issues call for attention to the problems of defining variables and improving the validity of predictors. They also require research aimed at improving the decision-making processes and methods related to the functions of recruitment, selection, and retention. For example, how can a recruitment program be structured to yield an optimally useful faculty for a school or school system?

Format and Methodology Used to Produce Recommendations

In addressing its problem area, the Panel on Teacher Recruitment, Selection, and Retention, like other panels at the Conference, first subdivided its general problem area into major areas of concern, or Approaches to the research problem. Second, it formulated general Programs of research and development to carry out the approaches. Finally,

the panel suggested, when appropriate and feasible, specific research Projects which would illustrate the kind of research that would be pertinent to the approaches and programs.

As noted above, the Panel was assisted by several advisory members. The first advisory group included representatives from the American Federation of Teachers, the National Education Association and the American Association of Colleges for Teacher Education. This group presented ideas on the involvement of teachers in planning, conducting and evaluating research and in inservice teacher education. The advisors dealt with aspects of the sociology of teaching, internships for teaching, the improvement of manpower projections, leadership training, and multicultural development.

The second advisory group consisted of a staff psychologist from the Equal Employment Opportunity Commission (EEOC) and a lawyer who frequently represents the National Education Association in teacher selection and retention lawsuits. These advisors spoke of models for validating selection procedures, and the impact of court decisions and EEOC requirements on the validation of selection measurements.

Having received the assistance of the advisory groups, the panel addressed the goal of formulating research in teacher recruitment, selection and retention: Which approaches could and should be taken and which programs and projects might be used in these approaches.

Organization of the Report

The report deals first with the goals of research on teacher recruitment, selection, and retention. The report provides an overview of the research approaches formulated by the panel and the rationales of those approaches that were ultimately selected as appropriate and significant.

Each approach is then discussed in turn. The discussion covers such topics as the historical background, the definition of the problem, current knowledge, expectations concerning future developments, and the theoretical framework of the approach. At the conclusion of this discussion, various research programs within the approach are presented. At the conclusion of the section on each program, exemplary research projects are presented and discussed.

The Problems of Teacher Recruitment, Selection, and Retention

The goal of this panel was to recommend research that will identify the factors affecting recruitment, selection, and retention of teachers and the means of improving those processes. The panel recommended research and development on devising, validating, and installing

methods for improving individuals' and institutions' decisions at certain critical points in a teacher's career:

1. Admission to a teacher education program,
2. Retention in the program,
3. Graduation from the program,
4. Certification or licensure,
5. Employment and assignment,
6. Orientation,
7. Inservice training,
8. Retention, transfer and promotion.

The classic research and development pattern in teacher recruitment, selection and retention consists in identifying criteria, selecting potential predicators of these criteria, and determining empirically their predictive validity. Accordingly, the panel gave early attention to criteria, predictors, and ways of basing judgments on their relationships. The criterion problem--how is "good teaching" defined and assessed--entailed consideration of competency indicators in the teacher evaluation procedures.

The panel dealt also with occupational choice and attrition processes --ways in which people are attracted toward or turned away from teaching. It considered the social class, ethnic and other origins of teachers and the effects of these on teacher recruitment and selection.

Because relatively few new teachers will be employed during the next decade, the panel placed emphasis on inservice training and decisions related to retention and mobility within school systems.

All the problem areas required concern for ethical, social, economic and legal implications.

The panel recognized that the functions of recruitment, selection, and retention occur at various stages in a teacher's career. For example, recruitment can be considered as a process occurring at the college level (attracting undergraduates into teacher training) or at the district level (attracting teachers to employment). The panel, therefore, discussed the processes of recruitment, selection, and retention on a functional level rather than specifically relating them to any one stage of the teaching career.

General Discussion of Approaches

The first problem faced by the panel was the danger of being paralyzed by the criterion problem. If recruitment, selection, and retention decisions are to be examined, against what standard are they to be judged? What constitutes "good," "competent," or "effective" teaching was, however, a question with which other panels at the Conference, especially panels 2-6, were to be concerned. Therefore, the panel indicated its concern for intensified research on the basic criterion issues, then moved on to consider research on the processes involved in recruiting, selecting, and retaining (or not retaining) teachers.

The panel did, however, note that efforts to define the criterion of teacher effectiveness in terms of student achievement or attitude go beyond present legal requirements for selection and inservice evaluation procedures. The newly-reissued American Psychological Association's Standards for Educational and Psychological Tests (1974), EEOC's long-awaited Uniform Guidelines on Employee Selection Procedures for Federal agencies, and recent Federal court decisions all express a willingness to settle for content validation, i.e., validation based on formal job descriptions and job analyses.

This decision--to avoid seeking that solution of the problem which says that "teaching competence must equal demonstrated ability to cause desirable learning in students"--was based on a reality repeatedly recognized by the practitioner-members of the panel: decisions concerning recruitment, selection and retention are being made daily in colleges and school systems, often on the basis of highly subjective procedures. Anything that can help to regularize and rationalize those procedures will be a step forward for most school district personnel offices. With improved procedures for on-the-job practices based on formal job analyses, school districts can wait with relative calm for the eventual possibility of defining teacher effectiveness in terms of student gain.

The panel also attempted to relate the recruitment, selection, and retention processes to one another. In many school districts and teacher education institutions, inservice or in-training evaluation standards are not systematically linked to the selection and recruitment processes. Similarly, selection and evaluation are frequently not the main source of information for designing individualized teacher supervision and inservice education programs. To emphasize dependency relationships in the total teacher recruitment-selection-retention process, the panel sought to relate the approaches to both teacher training and the practice of teaching. Nevertheless, teacher training was given less consideration in view of the concentration on that subject by other panels.

Much of the panel's discussion centered on the role of research in determining the values and priorities which school systems place on possible educational outcomes. For example, some school systems may value the maintenance of discipline over an open, "caring" environment in the classroom. These values may vary widely from one system to another. One way of determining these values might be to look at the types of outcomes that are rewarded by the school system. Such an investigation might proceed by describing the teaching styles and classroom behaviors of those teachers who are considered to be the "best" in that system.

It is likely that shared values regarding educational goals on the part of the potential teacher and the school system will go a long way toward solving the problem of teacher retention. This possibility is researchable, as is the question of the degree to which value systems differ among school systems.

If school systems differ substantially in their educational goals, research might address the problem of whether different criteria for

teacher selection are needed. Thus, will persons with certain aptitudes and characteristics do well as teachers regardless of the type of school system that hires them? Or do the characteristics of the effective teacher depend on the type of system? If different teacher characteristics are required in different school systems, are the characteristics produced by the education the prospective teacher receives or do they stem from earlier pre-teaching experience?

The panel also discussed the effect of the job market on recruitment and selection. When the number of vacancies is far less than the number of potential applicants, as is true in 1974, selection at some level is inevitable. The selection may occur at admission to college, at admission to the teacher education program, or at the point of hiring for a teaching position. Research could be directed at determining the best time for selection from the standpoint of the educational system as a whole, from the standpoint of the colleges, and from that of potential teachers. Another researchable question is whether sequential selection procedures should be used with liberal quotas for college admission. Panel members commented that since the potential teacher often cannot have much choice as to the specific position in which he or she will teach, what must be considered is the problem of selecting or training persons for maximum adaptability and growth potential.

The importance of congruity between the goals of the school system, the community, and the individual teacher was repeatedly emphasized by one panelist. He stressed research that would evaluate the impact on minority-group cultural values. Such research implies a need for understanding the value structures of various minority-group communities and the attitudes and training of teachers who staff the schools in those communities.

Rationales for Approaches Selected

Initially, the panel formulated twelve approaches for research and development within the general area of recruitment, selection, and retention. These approaches were based upon those significant activities which result in an individual's eventual adoption of, or exit from, teaching as a vocation. These were proposed and considered on the basis of the sequence of activities or decision points in a teaching career. The topics of these approaches were:

recruitment of teacher-trainees,
selection of teacher-trainees,
early professional education,
later professional education,
teacher-trainee evaluation and certification,
teacher training program characteristics,
teacher-trainee characteristics,
recruitment, selection of teachers,
pre-assignment training and orientation of teachers,
assignment of teachers, and
retention or dismissal of teachers.

After examining this unwieldy list, the panel decided that it was unnecessary, for research purposes, to emphasize the sequential relationships of events; it appeared more sensible to stress the functional nature of major events in a teacher's career. The panel settled on six decision points which determine who becomes and remains a teacher. These points are:

recruitment (into teacher training and teaching),
selection (into both training and teaching),
preparation (for teaching),
placement and orientation in a teaching position,
supervision and inservice education,
and position changes.

These approaches and their subordinate programs and projects are presented in the following sections of the report.

APPROACH 1.1

ANALYZE AND IMPROVE METHODS FOR RECRUITING TEACHERS AND TEACHER TRAINEES

New trends and pressures impinging on the teaching profession indicate that the recruitment process needs to be examined. Recent studies indicate that there are at least two candidates for every vacant teaching position. Further, teachers and other personnel are now being utilized in schools in more diverse ways. These changing styles of personnel utilization include the use of para-professionals, a variety of student-teaching models, involvement of the local community in the learning process, and the development of team teaching.

Yet, the concepts upon which teacher and teacher-trainee recruitment are based are outgrowths of traditional styles of teacher preparation and personnel utilization. Moreover, information regarding candidates and opportunities has typically been institution-based, that is, based upon exchanges between school district personnel offices and teacher training institutions.

As a result, the persons selected and admitted into the profession have been a relatively limited and homogeneous group. Their homogenity may be partially attributable to restrictive recruitment practices and to an individual's career decisions regarding teaching. At present, however, we do not have information indicating the reasons for the selection or rejection of teaching as a vocation by different types of individuals.

The Panel listed a variety of justifications for conducting research in the area of recruitment despite the current teacher surplus. These stemmed from: the judged shortcomings in present recruitment processes; the anticipated future benefits to the profession if recruitment were improved; and the research implications of current hypotheses and value judgments concerning recruitment.

A number of ideas were advanced supporting the need for research and development on the basis of the shortcomings of existing recruitment practices. For example, the panel felt that the dimensions of the teaching job are not fully and realistically articulated in the recruitment process. Similarly, research is needed to explain regional differences affecting recruitment and selection. Recruitment information and the attitudes of recruiters should be examined as factors in attracting or discouraging various groups now under-represented in the teaching force.

Under "future benefits", the panel pointed out that: First, enlarging the pool of candidates may improve the quality of instructors. Second, including non-educators with professional educators in the recruitment process may enrich the pool of potential teachers. Third, improving recruitment efforts may help improve the retention of the most competent students and teachers.

The panel expressed its own hypotheses and values regarding research and development in recruitment practices. First, different styles of learning require different kinds of teachers and teaching competencies. Second, teachers should represent more broadly the values of the population at large. Third, the recruitment of teachers from specific populations requires research on the values of the prospective teachers and their compatibility with the values of the institution or school system.

The programs developed within Approach 1.1 focus on the recruitment process in both its quantitative and qualitative aspects. Given the general oversupply of teachers, the panel was not concerned with attracting more teachers of all types into the profession. Rather, it was concerned with identifying what skills might be in short supply (or greater demand), and with matching teachers and teaching environments.

Three programs were developed to address these issues. The first dealt with quantitative aspects of the problem of developing manpower projections for teaching. The other two programs concentrated on improving the recruitment process. Of these, one program was proposed to improve the design of recruitment programs; the other would explore the recruitment process through alternative model recruitment programs.

Program 1.1.1 Develop Manpower Projections for Teaching.

The historical cycle that shifts back and forth from an abundance to a shortage of teachers appears consistently to have caught all affected parties unprepared for change. Although data exists in a variety of sources (e.g., the Census Bureau, Bureau of Labor Statistics, actuarial tables), there appears to have been little effort within the educational community to gather and analyze the data. Furthermore, much of the information which does exist is incomplete and cannot be directly used in its present form to provide school personnel and administrators with the information necessary to plan staffing needs.

Some areas of the nation are now struggling with unanticipated drops in school enrollment and population shifts. Accurate manpower projections would benefit all regions of the country. Research in this area should provide useful information for relatively small communities as well as for large school districts, training institutions, and those interested in entering training.

One project was developed to exemplify this program, focusing on manpower projections for metropolitan areas.

Project 1.1.1.1 Manpower Planning and Utilization in Metropolitan Areas. This project envisions the development of an inventory of teachers' special talents. Such an inventory would make possible recruiting and training teachers for specialized short-and-long-term tasks in response to the needs of metropolitan areas. At present, there are no procedures for locating teachers with specialized and leadership skills, and these teachers are not being well utilized. The technical knowledge for developing an appropriate management information system is now available. A system like that proposed would permit more rapid responsiveness in supplying teachers who meet the special requirements of schools and students. It would be useful for more flexible training and placement of teachers. The major problem in designing such a system would be maintaining and updating information in the inventory data bank.

Program 1.1.2 Design Recruitment Programs.

Until recently school systems suffered from a shortage of teachers and recruitment efforts functioned within that reality. Most colleges and school districts today have far more applicants than can be employed in the foreseeable future. Consequently, recruitment efforts being exercised by school districts are dwindling and many candidates are self-referred.

There is little information available about why some persons and groups enter the teaching profession and others do not. The variety and complexity of learning needs in the present school population suggests a need for more intensive efforts on specifically focused target populations. Research information may allow for planning in a coherent and systematic way for changes in the numbers and nature of populations to be served by the schools.

Systematic studies are needed to examine regional as well as national practices and trends in current recruitment programs, the backgrounds, interests and attributes of those entering the profession, and their appropriateness for new programs and varying pupil populations.

Project 1.1.2.1 Motivational Research Supporting the Design of Recruitment Programs.

Project 1.1.2.2 Identification of Teacher Characteristics and Abilities Acceptable to and Successful With Minority Students. There is a need for research to determine whether certain teacher styles or characteristics conflict with the learning styles of various students or various minority groups. Information on this subject can help determine whether other minority group students are measurably aided by having teachers whose cultural background resembles their own. In addition, this information could be valuable in the design of training and recruitment programs (both preservice and inservice) for teachers who work with minority group students. A project of this type could help school systems better meet the needs of the students and communities they serve. It might also increase the support of minority group parents and students for their public school systems. On the other hand, researchers may face opposition from minority group members who do not favor further classroom research of this type. Some teachers may also be opposed to the project if results could indicate that teachers' assignments should be based on their students' cultural background.

Program 1.1.3 Implement Model Recruitment Programs.

The development and implementation of model recruitment programs should rest on as much valid data as can be obtained on the factors affecting recruitment.

There do not appear to be trained recruiters skilled in career guidance and counseling to carry out the task. Alternative types of recruitment programs do not appear to exist within the respective school districts. Model programs could be implemented with different recruiting agents, lay and professional, with specific target populations to be recruited and identified. The programs would provide for systematic data collection to make possible an evaluation of the programs.

The retention rate of teachers recruited in model programs should be compared with that for the general teacher population. The few extant studies on the effectiveness of matching teacher and pupil cultural backgrounds could then be more systematically examined.

APPROACH 1.2

ANALYZE AND IMPROVE METHODS FOR SELECTING TEACHER TRAINEES AND TEACHERS

Selecting entrants into teacher education or into teaching jobs is now only occasionally a rational process; more often it is non-systematic or haphazard. A considerable body of theory and technology could make selection a more valid, objective, and efficient process. Bolton (1973), in mapping such a process, drew on concepts and procedures developed in business (Guetzkow and Forehand, 1961; Ghiselli and Brown, 1955); in psychological research (Cronbach and Gleser, 1965; Hammond, Hursch, and Todd, 1964; Horst, 1962); in educational research (Flanders and Simon, 1969; Medley and Mitzel, 1963; Ryans, 1960); and in educational practice (Evaluating Teaching Performance, Education Research Service, 1972). Other early efforts were those of Stern, Stein, and Bloom (1959) and Siegelman and Peck (1960) toward a detailed occupational role analysis.

Increasingly useful and sound methods have been developed for identifying the teaching-relevant characteristics of individuals. Significant analyses could now be made of the critical demands of particular teaching positions, considering specific kinds of schools, subjects, and pupils. Progress has been made toward statistical models that can test the "goodness of fit" of an individual with a specific job. Perhaps of equal importance, a system of procedures has been developed for personalizing the entire system, making the teacher an active partner in the whole process of exploring and deciding what he or she can do best and wants to do (Peck, Borich, Haak, and Godbout, 1974).

In practice, these potentially powerful resources have almost nowhere been synthesized and used in a coherent, systematic way. Entry into a specific teaching position is often the result of a series of accidental events: a young woman locates in a school district because her husband's job is there. Her first assignment frequently is not influenced by her field of special training in college. Often she is placed where the first vacancy appears. Very often she is placed in a school where few teachers prefer to remain. Her own preference for a grade level, a subject, or a particular kind of school organization (e.g., an open or a self-contained classroom) may not influence the assignment. Her potentialities for working best with one or another kind of student are almost never clearly identified, let alone weighed in the placement decision.

The same kind of process can readily be portrayed with teacher trainees, who may wander into a teaching program as much for the lack of a more attractive alternative as through desire or guidance. The program is usually stereotyped once the trainee decides upon a teaching field. Any preferences for certain instructors or special learning activities are usually weighed against the requirements or convenience of the training program. The rational matching of teacher capabilities with the demands of particular teaching positions cannot reasonably be proposed until certain kinds of basic and developmental research have been carried out.

The programs described below appear to include the major steps in the selection, training, and differential placement process. Tools need to be invented or adapted to measure both teacher characteristics and job demands: not once and for all, for that mythical, generalized model of "the good teacher," but for teachers (and many other kinds of education personnel) who can work effectively with some of the children among the widely varied kinds who come to our schools; and for teachers who can do well some of the many kinds of things that are needed in a modern instructional system.

A few projects are also described to illustrate how one part of one or another program could be carried out. Results from any one project could be useful to school administrators and teacher educators. The greatest impact on educational practice will come, however, if all the parts of this approach are fully developed and tested as an interlinked system.

In dealing with methods for selecting teacher trainees and teachers, we recognize that teacher selection is a two-stage process. The first stage takes place on admission to a teacher education program and the second at entry into a particular school or system. This two-stage procedure creates many problems since a measure of the ultimate criterion of job success cannot be readily ascertained for individuals entering a training program. New teachers do not enter the same school system, and teaching conditions and attitudes differ widely from one school district to another. Furthermore, questions of supply and demand enter the picture. For a number of reasons, insuring an adequate supply of potential teachers at the college level does not necessarily mean that demand can be met appropriately in each and every school. Foremost is the fact that hiring is not centralized across districts or regions. Even if there were central staffing in the state or region, individual preferences would create imbalance between supply and demand. Research emphasis must be placed at this time on identifying situational factors that affect teacher effectiveness, and on devising improved procedures for selection in the specific situation rather than searching for a universally appropriate type. Further, attention must be given to the effects of admitting to teacher training a sample of persons who are as broad and representative as possible in background and culture, and modifying the training if necessary, rather than depending heavily on stringent admission requirements.

Four programs of research were identified within this Approach Two of these programs approached the selection question from the standpoint of improving the quality, or fitness, of the persons selected for teaching positions. The other two programs dealt with improving the process of how the persons are, in fact, selected.

The programs dealing with using the selection process as an instrument in improving teacher quality avoided the classic criterion problem either (a) by relating teacher selection to specified educational values and objectives rather than to "learning," or (b) by using teachers empirically rated as "good" by a number of raters.

Program 1.2.1 Determine Procedures for Specifying Educational Objectives or Desired Outcomes in the Cognitive, Affective, and Coping Skills of Students.

In attempting to improve teacher selection procedures it is necessary to know what objectives are valued by the college or school system making the decisions. Vague statements about "better teachers" or "improved learning" are not sufficient. Residual gain scores on standardized tests have been suggested, but these have many drawbacks. Further, other outcomes such as attitudes toward learning, interpersonal skills, ability to express ideas, etc., should be considered. Methods are needed to measure these outcomes and to determine their relative importance for those who set school policy.

Project 1.2.1.1 Develop Measures for Determining Educational Values Held by Various Individuals and Groups. In discussing the selection and training of potential teachers and in the hiring and subsequent evaluation of teachers, educators and others assume that there is agreement as to the meaning of such terms as "effective" teaching, "best" teachers, and so forth. This vocabulary implies that there is a uniform and universally accepted set of values that can be applied to the outcomes of teaching.

That assumption appears highly questionable, but there is little research on which to base a sound conclusion. Various teaching outcomes have been identified and classified (Krathwohl, Bloom, and Masia, 1964). Peck et al. (1974) refer to outcomes in the three areas of cognitive, affective, and coping skills. Cronbach and Gleser (1965) have pointed out that the application of decision-making processes and strategies requires the assignment of values to all possible outcomes. This project would set the stage for relating a school system's evaluation of "good" teaching to the educational values it espouses, by developing methods for obtaining value judgments and measuring value systems in various educational situations.

A comparative judgment method might be used to assess educational values and place them on an ordinal scale. This initial instrument would then be applied to a sample of schools. Reliability would be investigated by internal consistency and test-retest techniques and by obtaining value judgments from several key people in each school. The resulting judgments would be compared with actual outcomes for students of teachers judged "best" in each school setting.

Success in developing such an instrument would make a substantial contribution toward improving the selection of teachers and teacher trainees. The project would also clarify for school systems and their publics the philosophical foundations of the systems.

Also, a comparison of the educational values of teachers who are successful with those of teachers who leave the system, either voluntarily or through dismissal, could be useful in relating educational values to retention.

Program 1.2.2 Determine Procedures for Identifying Desirable Teacher and Trainee Behaviors.

One method of validating selection procedures is through a job analysis by which behavioral attributes required in a position are specified. This method is particularly useful where performance on the job relates closely to a clearly defined product. Unfortunately, although knowledge as to how closely specific teacher behaviors relate to outcomes in the classroom has begun to accumulate, it is still inadequate, also it is unlikely that there is a single best way to teach. Some skills and attitudes can, however, be perceived in the classroom and may logically be termed important.

A great deal of research effort is now being expended in developing measures of teacher behaviors. Other panels discussed research in specific classroom teaching approaches and their relations to outcomes. At this point, we wish to do no more than identify this as a problem area.

Two projects were cited as examples of research which would be included within this program. These projects were not developed in detail. The projects are:

Project 1.2.2.1 Identify the Qualities and Behaviors of Those Designated by a Variety of Raters as "Good Teachers."

Project 1.2.2.2 Identify the Critical Teaching Skills Needed to Facilitate Learning in Various Teaching Environments.

Program 1.2.3 Improve the Collection and Analysis of Qualifying (Pre-Selection) Data.

Many kinds of assessment devices exist and are used to varying degrees in different school systems and colleges. These include self-report questionnaires, biographical forms, tests of aptitude and knowledge, school grades, structured interviews, measures of values, attitudes, and personality characteristics, and letters of reference. There is, however, little standardization in the way such data are collected, selected, and used. In part, this condition results from inadequate empirical research to demonstrate precisely how one or another kind of data can be used in a valid way to identify or forecast important characteristics of performance. Well-designed studies, based on nationwide samples of prospective trainees, teachers, and administrators are needed to identify valid and useful measures.

Even more, a carefully specified logical system is needed for synthesizing and interpreting such data in a way that allows comparison with performance criteria. Further, we need much more careful, detailed study of ways to select and specify information about particular types of teaching roles in specified settings.

Seven projects were developed in this program area. Four of these projects were devoted to examining and evaluating the contribution of the types of data upon which selection decisions are based: interviews, standardized tests, college records, and professional and personal references. The fifth project extends this line of evaluative research by bearing upon the synthesis and validation of teacher selection measures. Another project is devoted to the development of teacher performance measures. The last project indicates the panel's concern with the fairness of the selection process by addressing the problem of designing ways to include the teacher candidate's participation in the decision-making aspects of selection.

Project 1.2.3.1 Improve the Instruments and Procedures for Conducting Interviews. The interview process is used almost universally by school administrators as part of the teacher selection process. In spite of this wide usage, however, there is little research-based information on how to conduct interviews so as to collect valid and reliable data. Some research has dealt with the impact of the empathy of interviewers on the decisions made (Sydiaha, 1962); the effects of verbal and non-verbal cues on decision making (Bolton, 1968); the effects of order of information on decisions (Springbett, 1958); the impact of favorable and unfavorable information on decisions (Bolster and Springbett, 1961); and the effect of certain information-processing instructions on decisions (Bolton, 1968).

This background knowledge could be applied and expanded in research on teacher interviews during the selection process. Such research could determine the effects of instructions, of verbal and non-verbal cues, and of audio and audiovisual interview records on decisions regarding the selection of teachers.

Two possible difficulties in the project were cited: (a) determinin strong instructional variables, and (b) acquiring an adequate sample of experimental subjects with varied backgrounds.

Research of this kind could significantly improve this particular selection mechanism, which is now probably the most frequently used and least reliable.

*Project 1.2.3.2 Evaluate the Contribution of Existing Standardized Tests for Selection Into Training and Teaching.

*Project 1.2.3.3 Evaluate and Improve the Contribution of College Records (Course Grades and Student Teaching) to Selection Into Teaching.

*Project 1.2.3.4 Evaluate and Improve the Contribution of Professional and Personal References to Selection Into Teaching.

*These projects parallel Project 1.2.3.1 and were cited but not developed by the panel.

Project 1.2.3.5 Synthesize and Validate Teacher Selection Measures. At present, no validated, detailed, practical manual exists to help selectors make choices among candidates in a rational and fair manner, using data that have been demonstrated to be relevant to specific, thoroughly described teaching assignments. This project would be directed toward developing and testing a system of decision-making rules to obtain a valid picture of the specific strengths and weaknesses of a teacher-candidate for specified kinds of teaching situations.

Assessment research in industry, education, and clinical psychology has generated both measuring techniques and logical (though non-quantitative) models for synthesizing a "portrait" of an individual and matching it against role requirements (Siegelman and Peck, 1960; Stern, Stein, and Bloom, 1956). The logic of quantitative approaches has also been moving ahead (Cronbach and Gleser, 1965; Cronbach, Gleser, Nandy, and Rajaratnam, 1972). These advances have not yet been combined into a system of carefully specified rules for deriving an accurate, job-relevant synthesis from multi-variate assessment data; nor has a method been determined for assessing the "goodness of fit" between such a "portrait" of a candidate and the role assignment at issue.

Ideally, this project should be linked with Projects 1.2.1.1 (Development of Measures to Determine Educational Values) and 1.2.4.1 (Use of EDP to Summarize Information on Teacher Applicants and to Define Job Demands) for a clear focus with respect to well-specified teaching role-requirements. For maximum power and clarity, a statistical model will have to be developed which clearly represents critical decision rules and tests their power to generate an accurate picture of a teacher-candidate. Since many decisions reached in 1.2.4.1 will be situation-specific, it will take some years to complete this system; but each set of workable rules for a particular function will be a final product in itself, as well as being cumulative toward the overall system.

Even moderate progress would help improve the decision making by teacher educators and employers, both in objectifying the selection process and in improving the match between individual teachers and their assignments. In addition, results would be potentially applicable to all other panels at this Conference, in (a) identifying strengths and weaknesses of idea systems generated in Panels 2-6; (b) offering procedures for teacher utilization (Panel 7); (c) suggesting implications for selective placement in various roles (Panel 8); (d) adding a new model for quantitative analysis of decision making (Panel 9); and (e) clarifying criteria for sound identification theory and assessment theory.

Project 1.2.3.6 Develop Teaching Performance Measures for Selecting Among Applicants for Teaching Positions. An adequate on-site assessment instrument for the selection of teachers does not exist. Most current measures for selection (interviews, records, references) have inadequate reliability. Teacher examinations measure only academic preparation and have been contested in court. Thus, the objective of this project is to identify critical and validated procedures for use in a teaching performance test for selection among applicants for teaching positions.

This project would relate valid data pertaining to teacher effectiveness in the classroom to job analyses in order to identify the competencies necessary for teaching. This would form the basis for a performance test which would be used to rate candidates'

relative strengths and weaknesses. Results of the test would be validated against the candidate's subsequent performance on the job.

This project could contribute to more valid and defensible selection procedures.

Project 1.2.3.7 Design Ways to Include the Teacher Candidate's (Prospective Trainee's) Active Participation in all Decisions Within the Selection Process. This project was cited as an example of potential research directions, but was not discussed.

Program 1.2.4. Design Efficient Procedures for Making Selection Decisions.

A major research effort is needed to validate the connections between the data collected prior to selection and criterion measures of subsequent performance. Substantial progress has been made in devising ways to observe and analyze samples of teaching behavior. Yet, only a few, small-scale studies have compared such data with evidence of student learning, and most of those studies have been restricted to "measuring" pupil gains in low-level cognitive skills. Assuming that more research will soon be carried out to identify critical linkages between teaching acts and pupil-learning consequences, the optimal design for validating selection procedures can thereafter be pursued: validating selection procedures against patterns of teacher behavior and attitudes that are known to have certain desirable effects on student achievement not only of cognitive objectives but also of social-emotional objectives, such as feelings, motivations, and coping skills.

Drawing upon such evidence, we need to discover more effective ways to collate teacher assessment data with job analysis data and a more clearly specified, empirically tested system of decision-making rules for selecting and placing teachers.

Project 1.2.4.1 Use of Data Processing Equipment for Summarizing Information About Teacher Applicants. There does not presently exist a satisfactory means of reliably transferring the information that a school district desires about applicants into a format that facilitates decision-making. This project would be devoted to designing procedures for using data processing equipment for making such a transfer of information.

The computer technology required is available, and previous research has been conducted on: strategies for transferring information onto a single summary document, and (b) the effect of such a document on decisions (Bolton, 1968). In addition, research has been performed on pre-decisional processes of administrators (especially search procedures) and the impact of precise job descriptions on decisions (Hickey, 1970; Palmer, 1970).

The panel commented on three potential constraints on this project: (a) the high costs associated with developing initial strategies for transferring data, since there are only a limited number of strategies available at present; (b) the considerable time required in communicating with various districts that have teacher selection needs; and (c) the reluctance of some administrators and school districts to use data processing equipment and precise methods for recording and transferring information.

APPROACH 1.3

INVESTIGATE THE RELATIONSHIP OF TEACHER PREPARATION OBJECTIVES AND CURRICULUM TO TEACHER COMPETENCY AND EFFECTIVENESS

Early studies of teacher education took the form of surveys of current programs (e.g., U.S. Office of Education, National Survey of the Education of Teachers, Vols. 1 and 4, USOE, 1933). These surveys described the then current status and helped to identify problems and trends. Subsequently, the American Council on Education attempted to encourage selected institutions to develop new kinds of programs and analyze their impact. Several publications appeared as a result of these studies, including one on the use of evaluation in teacher education (Troyer and Pace, 1944).

By the 1950's, there was so much diversity in teacher education programs that efforts were begun to standardize requirements through national accreditation (NEA, National Commission on Teacher Education and Professional Standards, 1959, 1960a, 1960b). A review of these and other trends in research on teacher education programs is given in the article by Stiles and Parker in the Enclopedia of Educational Research (1969).

In contrast to this movement toward uniformity, several promising alternative approaches have been developed. Among these are the tutorial and clinical program at Northwestern University, the University of Wisconsin intern in teaching program, the Cardozo project in urban teaching, the Stanford University teacher intern program, the experimental teacher education program at Wayne State University, and the personalized teacher education program developed by the Texas R & D Center and used in whole or in part in a number of teacher education institutions in the United States and abroad.

Another recent development is the trend toward competency-based teacher education (CBTE). This term is variously interpreted in different places, and as yet is only a slogan in some instances. It refers to

programs that carefully specify discrete teaching competencies and then design sharply focused instructional procedures aimed at producing those competencies in trainees. Considerable developmental work along these lines has been done at such places as the University of Houston, Florida State University, the University of Toledo, and Weber State University in Utah.

As Peck and Tucker (1973) point out, empirical studies of teacher education require an extremely complex, multi-faceted research operation that is inherently expensive. Fairly comprehensive evaluation studies of program effects have been possible only at a few places, such as the Stanford and Texas R & D Centers. More such research programs are needed, if the best features (and the worst flaws) of the several teacher education models are to be identified. Only sound evaluation studies, tracking important program effects into the subsequent performance of teachers, will make it possible to prescribe teacher education procedures that have a high probability of working well.

A research strategy that has high potential value for validating preparation programs is the longitudinal approach. The effects of a particular kind of training should be traced into the teaching behavior of its graduates, and then the impact of this teaching behavior on student growth should be determined. Only one or two studies of this kind have been done (e.g., Sandefur, 1970).

Every major kind of preparation program for teachers should be subjected to a rigorous, objective examination of its effects. Furthermore, each significant sub-component should be empirically tested to determine whether it does what it is supposed to do. The National Council for the Accreditation of Teacher Education has been calling for this practice for the last three years. Little money has been assigned to this function, however, and a source of revenue for local funding simply is not in sight. The fact that training is funded through colleges, while professional performance is paid for by local school systems, makes this kind of empirical work a problem that cuts across institutional lines, since neither colleges nor school systems have funds for such research. Only large-scale, federal funding will make it possible to build genuine quality control into the education of teachers, both preservice and inservice.

Such research will deal with many questions, of which the following provide a few illustrations:

1. Can useful teaching skills be quickly learned by many kinds of people, not just by college students, given well-designed training units?

2. Can proficiency-testing be an adequate substitute for required training courses in some aspects of teacher education and certification?

3. Will alternate kinds of preparation have different outcomes? For example, will the specific effects of an impersonally managed CBTE program differ from the effects of a program that involves a continuing, informal personal relationship between instructor and teacher-trainee? Can differences in the teacher's self-knowledge, morale, and enthusiasm for continuation in the profession be expected?

   Similarly, how will the potency of a system of criterion-referenced training experiences compare with the effects of giving trainees an equal length of exposure in an apprentice-teacher role in real classrooms?

4. Do the present requirements for teacher certification guarantee at least a minimum level of satisfactory performance in some specified, widely usable teaching proficiencies, as measured in particular teaching situations?

5. Does training teachers to diagnose individual learning needs and problems of different children lead to greater pupil learning?

6. Can cost-effectiveness estimates be developed for evaluating the relative benefits of alternative procedures in teacher education?

These are merely illustrative questions not necessarily the focal ones that would actually be pursued. Additional research in this area, especially longitudinal research, is indispensable if teacher education is to be made more effective in relation to its costs and more permanently motivating to those who go through it.

The panel decided that research programs in this area should logically be based upon the major components of the teacher preparation process, and therefore suggested the following four major programs:

Program 1.3.1 Investigate General Education Courses.

Program 1.3.2 Investigate Professional Education Courses.

Program 1.3.3 Investigate Courses in the Subject Matter Field.

Program 1.3.4 Investigate Means for Improving Student Teaching.

In addition to encouraging research relating to the traditional route of teacher preparation, the panel suggested exploration of new methods of preparation for the teaching profession. Hence, a fifth program was suggested:

Program 1.3.5 Investigate Alternative Certification Routes.

These programs were offered as suggested areas for research and were not developed in any greater detail.

APPROACH 1.4

ANALYZE AND IMPROVE METHODS FOR TEACHER PLACEMENT AND ORIENTATION

The practices associated with induction into teaching positions have long been stabilized at an inadequate level. Often, the newly certified teacher moves from the role of student to that of classroom teacher with a relatively brief student teaching experience and a cursory welcome and offer of assistance from the supervisor. Beginning teachers are one of a host of groups competing for the time of principals and superintendents as a school year begins.

Some districts extend the welcoming day to "orientation week," assign to each novice a "helping teacher" and allow the beginner some free time for visiting the classrooms of older and presumably wiser colleagues. The faculty room coffee break and lunch hour frequently are the most potent orientation influences--though not always positive ones (see Smith and Geoffrey, 1968). A few districts with provision for multi-level staff roles or formal internship programs offer a more appealing and presumably more effective introduction to teaching.

These practices cannot now be alleviated by appealing for implementation of demonstrably better approaches since little research exists on the impact of teacher placement and orientation procedures on teacher satisfaction, teacher retention rates, or student growth. The literature on the subject consists of several varieties of personal experiences and opinions: Teachers write extremely unfavorable accounts of their first-year experiences (e.g., Kozol, 1970; a helpful appreciation of the problem can be gained from Fuchs, Teachers Talk, 1967). Administrators complain that teachers trained at almost any university are ineffective in the inner city schools; they agree that the teacher training institutions have failed to prepare their graduates for the real world.

Research in the area of teacher placement and preservice orientation could be expected to yield information on the costs and benefits to school districts of higher teacher retention rates that might result from better assignment and preservice training. Would such improved procedures result in fewer complaints or formal grievances and reduced incidence of teacher illness? Would children learn more from teachers who have been carefully placed by school administrators in a mutually

agreeable situation and offered a gradual, professionally-supervised induction into full teaching duties? Would more extensive and better planned assistance for beginning teachers result in less acceptance of stereotypes about instructional methods and student characteristics? In better relationships with administrators and parents? Would teachers so assisted be more open to change and innovation in their classroom procedures?

Certain questions of placement can be considered apart from the orientation procedures that may follow. One placement issue which deserves more research than the few existing studies is the value to the teacher, the students, or the school system of "matching or mixing" teachers and students, on the basis of race, socioeconomic status, or other characteristics (see for example, Strom, The Preface Plan..., 1967). Research procedures and suggestions for possible outcomes can be drawn from the considerable literature on induction techniques in business and industry.

Like the existing research on teacher placement and orientation, that on placement in and induction into teacher training programs is thin and unsystematic. Several universities have published case studies of their programs (University of Houston, Kansas State Teachers College). The R & D Center of the University of Texas has published a report on its program (Peck, et al., An Evaluation Model for Testing The Effects of a Personalized Teacher Education Program, 1974).

In general, the area of teacher and trainee placement and orientation is dominated by demonstrably poor practices which will almost certainly continue to waste human and material resources in the absence of research that make new developments and better programs possible.

Three programs were developed within this approach. It is suggested that research be devoted to the problems of developing first, new placement procedures and, second, new orientation programs. A third program was suggested to encourage research investigation of the individual teacher's and the school's decision-making process in teacher placement and orientation.

Program 1.4.1 Design and Test New Teacher Placement Programs.

The teacher shortage of the past two decades did not encourage research in teacher placement. Teachers were usually hired and placed to fill vacancies with little effort to match personal and position qualities. The wastefulness of this practice has become clear with the abatement of the personnel shortage that encouraged it. The idea of seriously probing candidates' interests in order to design a fit of candidate with task has been attempted for a few entry-to-training programs (see Approach 1.3.). School district personnel administrators usually arrange a visit to a school and a meeting with the principal for candidates who are being considered for a specific position, but research on the value of such placement processes is slight. The entire process of fitting teachers to their initial assignment is discussed at the level of reports on local practice, without new models whose effectiveness has been tested.

The assumptions and objectives of the design of new placement programs are reviewed in the commentary under Approach 1.4. The relationship of this program to the two which follow (dealing with the orientation program and the decision-making processes in placement and orientation) is evident. It is an obvious hypothesis that placement and orientation processes affect retention decisions (dealt with in Approach 1.6.). An almost equally strong relationship exists between this program and Approach 1.5 (dealing with the supervision and inservice education of teachers).

Project 1.4 1.1 Comparison of Outcomes in Schools That Build Upon a Specific Community's Culture and Schools That Impose a Standardized Curriculum on the Community. There is a lack of research information dealing with cultural relationships between the school and the community. We do not know how important it is to establish and work from a specific cultural base during the education process or whether it is important for schools to reflect the culture of their students. Research in this area would investigate the effects of establishing a teaching climate that reinforces the culture of the community served by the schools. This research would have a major impact on selection, training, and placement of teachers.

The project could involve longitudinal studies to establish new schools or redesign school "climates" to reflect and reinforce the cultural base of the community served. It could include special training of educational personnel, since few teachers are now available who are trained or skilled in multi-cultural programs.

Research in this area might: (a) affect the way teachers are trained, selected, and retained in the profession; (b) result in greater teacher and community satisfaction and cooperation; and (c) result in greater success in formal education.

Program 1.4.2 Design and Test New Teacher Orientation Programs.

The orientation of teachers and teacher trainees has not been seen by most school districts or college administrators as highly important. Thus the dearth of research in this area is predictable. The curriculum and the classrooms have been regarded as a constant to which such variables as beginning teachers' or trainees' needs and capabilities must accommodate.

If prospective teachers or trainees are given some voice in deciding upon where they will enter the system (Program 1.4.1), it would appear profitable to do everything possible to insure their success in their new positions. How can job satisfaction be facilitated for the beginning teacher? What human and material aids for teaching are most favorably regarded by new teachers, their pupils, parents and administrators?

As stated in the description of Approach 1.4., the experience of industry suggests that intensive and extensive orientation systems may reduce employee turnover and improve employee attitudes and effectiveness. A series of new teacher orientation models should be designed, and their costs and benefits should be estimated on the basis of pilot tests.

This program's objectives are related to those of other programs under Approach 1.4 , as well as to programs under Approaches 1.5., and 1.6.

Program 1.4.3 Examine Organizational and Individual Decision-Making Processes in the Placement and Orientation of Teachers and Teacher Trainees.

Studies of decision making in school situations are not uncommon, and similar studies for other personnel areas abound. A number of questions are suggested by this literature: Does the propensity to let new teachers learn through experience arise from administrative indifference or, at least partly, from the veterans on the teaching staff--those who feel that new teachers must learn the hard way, as they did? Do rigidities in the school system, e.g., no incentives for filling the most difficult teaching posts, make inevitable the assignment of new teachers to the tasks they are often least equipped to handle? Do scheduling or staff problems determine which instructors the trainee receives? For reasons cited in Approach 1.4 , these and associated questions have scarcely been tested in school districts or schools of education.

It is assumed in recommending this program that teacher placement and orientation decisions now result from acceptance of existing structures and attitudes on the part of all participants in the process. The decision-making procedures in both current and newly designed models, if studied, will enable the organizations and subjects of placement and orientation procedures to examine their rationality, acceptability, and perhaps inevitability. Programs 1.4.1 and 1.4.2 would then be more likely to bear fruit.

Project 1.4.3.1 Determine the Value of Examining the Interrelationship of Situational and Individual Variables as a Basis for Optimizing Teacher Placement Procedures. This project was suggested, but not developed by the panel.

APPROACH 1.5

ANALYZE AND IMPROVE THE SUPERVISION AND INSERVICE EDUCATION OF TEACHERS

The area of teacher recruitment, selection, and retention is vitally concerned with proper staff assignment and reassignment as a major component of any educational program of high quality. Ideally, assignments relate directly to staff needs and are influenced by such critical factors as the training, characteristics, background, or talents of personnel. Actually, however, assignments are too often made in a way which merely fills a current need or vacancy and may result in an individual's not being fitted to a particular situation.

Interest in and concern for proper staff assignment goes beyond initial placement. Likewise, interaction between personnel and supervisors continues and intensifies once an assignment is made.

Evaluation procedures and processes involving reliable measurement instruments and systems should become an integral part of this interaction. Judgments that focus upon improving service within an assignment area and emphasize improving teacher performance are desirable and effective. Improving service and ensuring that personnel remain qualified requires opportunities for continued professional growth through cooperatively planned and comprehensive inservice programs. As continued growth and evidence of successful experience and effectiveness are recognized, the teacher's need for opportunities for some form of advancement or reassignment becomes apparent. Better planned assignment of personnel to positions should improve staff retention and effectiveness.

The programs developed within this approach dealt with research efforts to improve the skills, utilization, and advancement opportunities of teachers who have already entered the profession. Three research programs were suggested.

Program 1.5.1 Analyze and Improve Inservice Training Activities.

The area of inservice teacher education has been grossly neglected as an object of research. It is essential that individualized inservice programs be designed that reflect the needs of individual teachers and are shown to result in the improvement of instruction.

Comprehensive inservice programs should deal with problems and concerns of the beginning teacher as well as those of the experienced teacher.

Inservice programs may emphasize curriculum improvements, leadership training, and program development, or they may simply offer refresher courses. Regardless of program area, it is important that cooperative planning take place if teachers are to recognize and do something to remedy their weaknesses.

Two research projects were developed as part of this research program. Both deal with the development of pilot training programs for teachers. One project would focus on helping teachers understand their own cognitive styles; the other project would be directed at improving the skills of teachers who teach at a specific grade level.

Project 1.5.1.1 Design Pilot Training Programs to Help Teachers Understand Their Own Cognitive Styles and the Implications of Their Cognitive Styles for Students With Similar or Dissimilar Styles. Although past research attempts to link teacher and learner attributes to classroom processes and outcomes have not been very successful (see McNeil and Popham, 1973, p. 233), there is some evidence that teachers' instructional behaviors differ according to their cognitive styles. Similar evidence shows that congruence between teachers' and students' styles--or lack of it--causes differences in attitudes, grades, and quality of student learning (Witkin, 1973). A fairly large body of research on cognitive styles testifies to the stability and measurability of respective styles and their correlates (Witkin et al., 1973). However, no evidence exists as to whether cognitive styles are trainable or adaptive behaviors on the part of either teachers or students. Furthermore, there are no reports of studies having developed teaching programs and materials specifically geared to such cognitive differences.

A project aimed at developing methods to help teachers understand their cognitive styles and relate them to students' cognitive styles could improve the teacher's ability to individualize instruction and thus neutralize one cause of learning difficulties. Some aspects of

this research would pose problems. It would be highly desirable to conduct several pilot studies, but this procedure would be time consuming and expensive. The end product of the study could be misunderstood or misused--e.g., used to evaluate teachers. Finally, the training programs developed would have to be very detailed, since each school district would have to be a training site. Nevertheless, a successful result could reduce interpersonal tensions and learning difficulties in the classroom.

Project 1.5.1.2 Design Individualized Inservice Pilot Programs for Teachers. Individualized inservice programs are especially important in a period of limited teacher mobility because fewer new teachers--and new ideas--may enter school systems. Research in this area would be directed at improving the competencies of teachers at a specific grade level, e.g., the fourth grade, based upon weaknesses identified during on-site reviews of teachers. This study would be directed at establishing some agreement among teacher trainers, administrators, and teachers within the school district as to required minimal skills for teachers at a particular level and, through field surveys, matching these opinions against job analyses done by survey or direct observation. These data could form a basis for helping to identify particular teachers' weaknesses.

The ultimate goal of this project would be to improve program effectiveness by instilling professional personnel with greater self-esteem and self-confidence.

Program 1.5.2 Synthesize and Use Current Knowledge Concerning the Evaluation Process.

Generally speaking, the evaluation of teachers is concerned with making judgments relating to "goodness" of teacher behavior and the results of teacher behavior in the light of certain predetermined and sometimes agreed-upon objectives. For evaluation to occur, there must be measurement preceding the value judgments. Measurement involves the quantification or classification of events, behavior, or outcomes.

Much more effort has been expended in developing theory and conducting research on the measurement process than on the process needed to predetermine objectives or obtain agreement between evaluator and evaluatee on the objectives. And much of this effort has dealt with cognitive outcomes, with more recent activities focused on measures of affective outcomes and procedural events. Although much has been written of a prescriptive nature regarding how evaluators should behave, not much effort has been expended to determine what precise human skills are needed or how these skills can be acquired. It appears, however, that an evaluator should have

the capability of delaying closure on judgments to be made until the following has been accomplished:

a. A determination of what is important in a given situation,
b. Adequate measurement,
c. Analysis of data, and
d. Interpretation of the data.

Note that an assumption is made that judgments and evaluations regarding teachers are inevitable. In effect, teachers are currently evaluated by students, parents, administrators, supervisors, other teachers, and the public. Whether this evaluation occurs is not an issue. The real issues are concerned with whether the criteria are appropriate and the data are sound. Another assumption is that formal evaluations of teachers should be analytic rather than comparative, establishing whether the teacher reaches various standards but avoiding attempts to compare the teacher with other teachers.

Considerable recent work on the evaluation programs (e.g., Stufflebeam et al., 1971) and on evaluation theory (e.g., work at U.C.L.A.'s Center for the Study of Evaluation) has application to the evaluation of teachers. Also, certain individuals have been working actively to develop processes that are useful in a wide variety of settings (Popham, 1973; Bolton, 1973). In addition, the entire performance-based teacher education movement has had some impact on theory development. This movement is closely related to the management-by-objectives (MBO) procedures used in industry (Odiorne, 1965).

Two trends in educational organizations noted by Bolton (1973) are those toward the use of MBO procedures and self-evaluation procedures. MBO tends to emphasize student achievement of objectives (or products), while self-evaluation tends to emphasize teacher behaviors (or processes). It should be noted that a combination of these two trends causes one to examine both process and product simultaneously in the evaluation program. In effect, when this kind of evaluation is done by a given teacher, there is an attempt to answer the question, "What works, for this given teacher, in this specific teaching situation?"

Currently, much effort is being expended to develop measures of teacher behaviors (in the classroom) and to relate these measures to student achievement of objectives. The major efforts are being made to determine generalizable findings. Until such generalizable results are available, there is a need to determine:

a. How a situation may be studied to determine the purposes of evaluation and the desired outcomes that are unique to that situation;

b. How evaluators and teachers may be taught to analyze and interpret information collected in such a way that reasonable decisions may be made.

When precise research information is obtained regarding the above, educational organizations will be in a better position to determine whether a teacher evaluation system is functional. In effect, they will be in a better position to determine whether teachers with problems are improving, whether teachers understand what is expected of them, whether consistently ineffective teachers are being identified, and whether adequate information is being provided to improve the selection process. A determination of many of these items has a direct relationship to the Approaches on selection and position changes. Likewise, the information acquired should be useful for inservice training and supervision.

Four projects were suggested in this program area; only two of these were fully described as potential projects. The other two are included here in outline form.

Project 1.5.2.1 Develop Planning Procedures for Teacher Evaluation.

1. Complete description of situational factors affecting teacher productivity.
2. Specification of reasons for evaluation in the specific situation.
3. Determination of teacher goals and objectives (both in-classroom and out-of-classroom).
4. Identification of appropriate measurement devices for collecting information regarding goals and objectives.

Project 1.5.2.2 Develop Information-Collection Procedures for Teacher Evaluation.

1. Cognitive outcomes.
2. Affective outcomes.
3. Coping skills.
4. Teacher behaviors (in-classroom and out-of-classroom).

Project 1.5.2.3 Conducting Evaluation Conferences with Teachers. Little is known about the dynamics of conferences used to provide feedback to teachers which will be acceptable and usable. Research has been

done in business to assess the effectiveness of various types of performance appraisal conferences (Meyer and Walker, 1961; Meyer, Kay, and French, 1965). In the teaching profession, the manner in which feedback is provided appears to have an impact on teacher growth, improvement, and relation to supervisors (Rose, 1963).

This project would determine specific conference techniques for the teaching profession, techniques which could be helpful to teachers' performance in and out of classrooms. Potential strategies would initially be developed, refined, and assessed in simulated situations before testing and assessing them in real situations. At present, there is a considerable body of informal knowledge regarding how evaluation conferences should be conducted (Bolton, 1973), but alternative strategies have not been tried or evaluated in a research framework. This information is needed to conduct evaluation conferences that are helpful to the teacher who needs information regarding his own success, or lack thereof, in teaching.

Project 1.5.2.4 Design, Establish and Evaluate Several Teacher Centers. The basic function of a teacher center is to communicate to teachers new ideas and materials for classroom use. In addition to collegial discussion and resource materials, the center would provide formative evaluation through audiotape and videotape facilities, simulation devices for tests and diagnostic feedback and short courses for course credits or inservice credits.

A critical factor in the success of a teacher center is that control of the center's activities rests with the teachers. Policies and offerings depend on the expressed need of the teacher clients. The evaluation and level of activity of individual participants is confidential and can only be communicated by the individual teacher.

Teacher centers have operated with positive participant evaluation for some years in England and, more recently, in the United States. The concept is strongly supported by teacher organizations in this country, to the extent that several local teacher organizations have established their own centers. The success of industry in using assessment centers should be studied for possible applications (see Campbell and Bray, 1967; Byham, 1970).

Program 1.5.3 Develop and Evaluate Models of Teaching as a Multi-Level Profession.

The question of whether multi-level professional opportunities for teachers are helpful in attracting and retaining the most talented individuals needs to be answered. It is also important to learn what approaches stand the best chance for success. It is critical to the

success of our educational enterprise that answers be sought through a program that would:

1. Gather and review existing information on multi-level professional staffing plans.

2. Design formats for storing and retrieving information.

3. Develop preliminary design (models) of programs that would provide for:

   a. a trainee level
   b. an entry level
   c. a standard level
   d. a master level
   e. a professional level

4. Develop preliminary design and instruments for collecting data on the procedures and effects of such staffing arrangements.

5. Select cities for models to be tried out.

6. Review and revise instruments and models in cooperation with a board composed of representatives from national education organizations and teachers from sites selected for research.

7. Implement the project and gather the data.

8. Evaluate data and compare models.

9. Select several states and districts to demonstrate effectiveness of most successful model(s) and compare to control states.

10. Produce report and disseminate information.

11. Evaluate data and compare models.

12. Disseminate summary of findings to:

    a. school systems
    b. state education systems
    c. national organizations
    d. Federal government

13. Produce report and recommendations for state and national implementation.

APPROACH 1.6

INVESTIGATE THE DECISION-MAKING PROCESSES UNDERLYING POSITION CHANGES IN TEACHING

The lack of knowledge about the social structure, social psychology, and culture of schools and teaching has resulted in a limited understanding of the reasons for which people remain in, leave, or make changes of positions within the teaching profession (see Lortie, 1973, for research findings). Several hypotheses have been advanced to account for teachers' changing positions. For example, these changes may be caused by profound and unperceived differences of educational goals between teachers and the institutions they attend or serve; or it may be difficult for teachers to accept students' and parents' standards and goals that are different from theirs. Or, the lack of opportunities for promotion may induce teachers to leave for higher salaries, greater responsibilities, or higher professional status.

Very few teachers (less than 10%) in public schools represent the minority groups that are educated in public schools. Relatively few potential teachers from minority cultures have an opportunity to enter the teaching profession. When the cultural background of teachers differs widely from that of their students, either students or teachers or both may leave the school.

Many teachers leave the profession for a wide variety of personal reasons, e.g., teachers' low salaries and status, the use of teaching as a "second" job supporting a family unit.

Some teachers leave the profession when their efforts are frustrated by inadequate preparation. They may be unable to communicate with children, to appreciate other cultures, to understand the learning styles and problems of various types of children, or to diagnose the educational, emotional, cultural, or health problems of children.

Finally, teachers may feel frustrated when they do not have an opportunity to influence decisions that affect their professional lives.

In addition to teachers' own reasons for changing positions, school systems move teachers from position to position or out of the system, and the processes involved in these organizational decisions should be investigated.

Three programs were selected as examples of research that would be appropriate to this approach. Each of these programs would explore position-changing decisions from one of three vantage points: that of the teacher, that of the organization, and that of an ethical framework.

Program 1.6.1 Investigate Personal Decisions by Teachers and Trainees Resulting in Position Changes.

Program 1.6.2 Investigate Organizational Decisions Resulting in Position Changes by Teachers or Trainees.

One project was cited as an example of research appropriate to this program area.

Project 1.2.6.1 Study the Existence and Effect of Discrimination Against Women in Admission to Training and Positions in School Administration.

Program 1.6.3 Design and Conduct a Series of Studies on Moral Decision-Making Processes in School Organizations.

SUMMARY

For some thirty years prior to 1970, school districts sought teachers in a market where supply fell short of demand. Recruitment and selection procedures focused on two questions: Is the candidate available? Does he or she have appropriate certification? Even the latter criterion sometimes had to be waived if classrooms were to be staffed.

In the 1970s, and for the foreseeable future, the market for teachers is radically different. At least 250,000 certified teachers are currently seeking full-time employment, and graduating classes of teachers still total about 200,000 annually. Hence, the level of the teacher supply continues to rise dramatically.

Given this recent surplus, employers can now select teachers and candidates for teacher education much more carefully than before. Accordingly, Panel 1 dealt with two fundamental questions: How can and should we identify the best teachers and candidates for teacher education? How can we encourage these desirable persons to enter and remain in teaching?

These problems are not new, and they require attention to the problems of defining and measuring teacher effectiveness. But Panel 1 saw the latter problems as primarily the concerns of Panels 2-6 (to be described below). Hence, Panel 1 did not aim at the ideal of recruiting and selecting teachers on the basis of measures validated against teaching effectiveness--measures which had themselves been validated against student achievement. Not only is that ideal unattainable at present, but it appears to go well beyond what the law now requires of school personnel officials. That is, the courts and the upcoming uniform federal guidelines for employment will probably be satisfied by selection measures whose content has been validated against job analyses of teaching.

Thus, Panel 1 began with the basic question of how school districts and teacher education institutions can be aided in understanding and projecting their requirements for teacher personnel. Further, it set forth the research needed to determine what attracts various kinds of persons to teaching careers and what discourages them from such careers. In particular, the panel considered the problems of recruiting into teacher education and teaching careers members of racial and ethnic groups that are now underrepresented in the profession.

Further, the panel dealt with the problems of establishing criteria for the selection of candidates into teacher education and teaching. It urged continued research on the criterion problem along several promising lines: continuing the effort to determine relationships between teacher behaviors and student achievement of educational objectives; identifying desirable behaviors on the basis of expert judgment; and especially, improving current procedures for collecting and analyzing data on which decisions about admission into teacher education and teaching positions are based.

Because of its close relationship to the panel's primary concerns, the problems of teacher education were also considered, despite their being central concerns of Panels 2-6. Here, Panel 1 simply indicated several obvious areas of investigation, without specifying them at the level of projects; the panel did discuss the present discontinuity between the standards applied to teachers and those applied to teacher trainees. This discontinuity should be reduced, so that the bases for recruiting, selecting, and retaining teachers are more closely linked to those used for trainees. Thus, wherever it seemed feasible, the panel combined within each proposed research and development program considerations of both practitioners of teaching and candidates for teacher education programs.

The problems of placing teachers in the most appropriate positions and of orienting them to their work in new positions were seen by the panel as virtually unexplored. Research and development in these areas appear to have high potential value for improving the effectiveness and job satisfaction of first-year teachers. Studies in industry support the expectation that carefully fitting employees to their jobs will significantly improve outcomes for both individuals and their organizations. Here again, the concerns of minority groups about matching teachers' backgrounds and attitudes with the culture of the communities they serve received considerable attention.

The panel linked consideration of teacher retention to the improvement of inservice teacher education. Substantial expenditures for inservice teacher education are made by school districts and state departments of education, but teachers often regard these activities as tedious and unproductive. The panel recommended the development of pilot inservice education programs based directly on daily classroom activities with teachers involved in the planning and conduct of the training sequences.

The panel also emphasized the need for research and development on the improvement of teacher evaluation. Here, the problem of devising new criteria was emphasized less than that of improving and synthesizing current evaluation processes. Most of the illustrative projects do not indicate whether the profiles of teaching performance thus gained should be used primarily for summative or formative evaluation of teaching, but

one proposed project does clearly focus on helping teachers improve their own and their colleagues' work through teaching centers. Further, the panel recommended studies in which teaching is viewed as consisting of sets of skills that can be clustered into various specialized roles calling for differentiated assignments.

Finally, the panel considered the decision-making processes entailed in the transfer, promotion, retention, or dismissal of teachers. What kinds of persons remain in or leave teaching and teacher education programs? What are these persons' reasons for their decision? What are the bases for the institutions' or school systems' decisions? The responses to these questions may have important implications for the costs of school districts and teacher education institutions. Promotion policies and practices also have important effects on schools. What kinds of persons are encouraged to prepare themselves for administrative roles? Are opportunities for advancement presented in ways that encourage women and minority group members--who tend to be severely underrepresented in school administrative positions--to qualify and apply? The panel formulated approaches and programs aimed at these problems.

REFERENCES

American Psychological Association. Standards for educational and psychological tests. Washington, D. C.: 1974.

Bolster, B. I., & Springbett, B.M. The reaction of interviewers to favorable and unfavorable information. Journal of Applied Psychology, 1961, 45, 98-103.

Bolton, D. L. Variables affecting decision making in the selection of teachers (Cooperative Research Project No. 6-1349). Seattle: University of Washington, 1968.

Bolton, D. L. Selection and evaluation of teachers. Berkeley, Cal.: McCutchan Publishing Corp., 1973.

Byham, W. C. Assessment centers for spotting future managers. Harvard Business Review, 1970, 48, 150-164.

Campbell, R. J., & Bray, D. W. Assessment centers: An aid in management selection. Personnel Administration, 1967, 30, 6-13.

Cronbach, L. J., & Gleser, G. C. Psychological tests and personnel decisions. Urbana: University of Illinois Press, 1965.

Cronbach, L. J., Gleser, G. C., Nanda, H., & Rajaratnam, N. The dependability of behavioral measurements: Theory of generalizability for scores and profiles. New York: Wiley, 1972.

Educational Research Service. Evaluating teaching performance (Circular No. 2). Washington, D. C.: National Education Association, American Association of School Administrators and Research Division, 1972.

Equal Employment Opportunity Commission. Uniform guidelines on employee selection procedures. Washington, D. C.: Author (in draft).

Flanders, N. A., & Simon, A. Teacher effectiveness. In R. L. Ebel (Ed.), Encyclopedia of educational research (4th ed.). New York: MacMillan, 1969.

Fuchs, E. Teachers talk: a view from within inner city schools. New York: Project True, Hunter College, City University of New York, 1967.

Ghiselli, E. E., & Brown, C. W. Personnel and industrial psychology (2nd ed.). New York: McGraw-Hill, 1955.

Guetzkow, H., & Forehand, G. A. A research strategy for partial knowledge useful in the selection of executives. In R. Tagiuri (Ed.), Research needs in executive selection. Boston: Harvard University, Graduate School of Business Administration, 1961.

Hammond, K. R., Hursch, C. J., & Todd, F. J. Analyzing the components of clinical inference. Psychological Review, 1964, 71, 438-456.

Hickey, M. E. Pre-decisional information search in teacher selection (Bureau of Research Project No. 9-1-037, U. S. Office of Education). Washington, D. C.: Government Printing Office, 1970. (ERIC Document Reproduction Service No. ED 041 849)

Horst, P. The logic of personnel selection and classification. In R. M. Gagne (Ed.), Psychological principles in system development. New York: Holt, Rinehart, and Winston, 1962.

Kozol, J. Death at an early age. New York: Bantam Press, 1970.

Krathwohl, D. R., Bloom, B. S., & Masia, B. B. Taxonomy of educational objectives: The classification of educational goals. Handbook II: Affective domain. New York: David McKay, 1964.

Lortie, D. C. Observations on teaching as work. In R. M. W. Travers (Ed.), Second handbook of research on teaching. Chicago: Rand McNally & Company, 1973.

McNeil, J. D., & Popham, W. J. The assessment of teacher competence. In R. M. W. Travers (Ed.), Second handbook of research on teaching. Chicago: Rand McNally & Company, 1973.

Medley, D. M., & Mitzel, H. E. Measuring classroom behavior by systematic observation. In N. L. Gage (Ed.), Handbook of research on teaching. Chicago: Rand McNally & Company, 1963.

Meyer, H. H., Kay, E., & French, J. R. P., Jr. Split roles in performance appraisal. Harvard Business Review, 1965, 43, 123-129.

Meyer, H. H., & Walker, W. B. A study of factors relating to the effectiveness of a performance appraisal program. Personnel Psychology, 1961, 14, 291-298.

NEA, National Commission on Teacher Education and Professional Standards. The education of teachers: Curriculum programs. Washington, D. C.: Author, 1959.

NEA, National Commission on Teacher Education and Professional Standards. The education of teachers: Certification. Washington, D. C.: Author, 1960a.

NEA, National Commission on Teacher Education and Professional Standards. The education of teachers: Considerations in planning institutional programs. Washington, D. C.: Author, 1960b.

Odiorne, G. S. Management by objectives. New York: Pitman Publishing Corp., 1965.

Palmer, D. H. Situational variables affecting decision making in the selection of teachers. Unpublished doctoral dissertation, University of Washington, 1970.

Peck, R. F., Borich, G., Haak, R., & Godbout, R. An evaluation model for testing the effects of a personalized teacher education program. Austin, Texas: University of Texas, Research and Development Center for Teacher Education, 1974.

Peck, R. F., & Tucker, J. A. Research on teacher education. In R. M. W. Travers (Ed.), Second handbook of research on teaching. Chicago: Rand McNally & Company, 1973.

Popham, W. J. Evaluating instruction. Englewood Cliffs, N. J.: Prentice-Hall, 1973.

Rose, G. W. The effects of administrative evaluation. National Elementary Principal, 1963, 43, 50-56.

Ryans, D. G. Characteristics of teachers: Their description, comparison, and appraisal. Washington, D. C.: American Council on Education, 1960.

Sandefur, J. T. Kansas State Teachers College experimental study of professional education for secondary teachers. Journal of Teacher Education, 1970, 21, 386-395.

Siegelman, M., & Peck, R. F. Personality patterns related to occupational roles. Genetic Psychology Monographs, 1960, 61, 291-349.

Smith, L. M., & Geoffrey, W. The complexities of an urban classroom. New York: Holt, Rinehart, and Winston, 1968.

Springbett, B. M. Factors affecting the final decision in the employment interview. Canadian Journal of Psychology, 1958, 12, 13-22.

Stern, G. G., Stein, M. I., & Bloom, B. S. Methods in personality assessment: Human behavior in complex situations. Glenco, Ill.: Free Press, 1956.

Stiles, L. J., & Parker, R. P., Jr. Teacher education programs. In R. L. Ebel (Ed.), Encyclopedia of educational research (4th ed.). New York: MacMillan, 1969.

Strom, R. D. The preface plan. A new concept on inservice training for teachers newly assigned to urban neighborhoods of low income (Report No. BR-6-1365). Columbus: Ohio State University, 1967. (ERIC Document Reproduction Service No. ED 017 596)

Stufflebeam, D. L., Foley, W. J., Gephart, W. J., Guba, E. G., Hammond, R. I., Merriman, H. O., & Provus, M. Educational evaluation and decision-making. Itasca, Ill.: Peacock Publishers, 1971.

Sydiaha, D. Interviewer consistency in the use of empathic models in personnel selection. Journal of Applied Psychology, 1962, 46, 344-349.

Troyer, M. E., & Pace, C. R. Evaluation in teacher education. Washington, D. C.: American Council on Education, 1944.

U. S. Office of Education. National survey of the education of teachers (Vols. 1 and 4). Washington, D. C.: Author, 1933.

Witkin, H. A. The role of cognitive style in academic performance and in teacher-student relations (Research Bulletin No. 73-11). Princeton: Educational Testing Service, 1973.

Witkin, H. A., Oltman, P. K., Cox, P. W., Ehrlichman, E., Hamm, R. M., & Ringler, R. W. Field-dependence-independence and psychological differentiation (A bibliography through 1972, with index) (Research Bulletin No. 73-62). Princeton: Educational Testing Service, 1973.

APPENDIX

PANEL 1 APPENDIX: SUPPLEMENTARY PROJECT INFORMATION (p.1)
(Please see Cautionary Note at end of chart)

Project No.	Short Title	Related Programs	Signif.to Approach Objective: Critical	Signif.to Approach Objective: Contrib.	Target Group	Phases & Time Frame	Sequence re Other Projects	Man Months	Pers. Costs	Total Costs
APPROACH 1.1: RECRUITMENT										
1.1.1.1	Manpower Planning & Utiliz'n. in Metro. Areas	1.1.2: Design of Recruitmt. Programs 1.1.3: Implementation of Recruitment Programs 1.2: Supervision & Inservice Ed.		✓	Personnel Directors, Principals, Teachers	a) Identify info needed: 6-8 mos. b) Develop means to acquire info: 2-4 mos. c) Develop storage & retrieval : 6-8 mos. d) Develop means to keep info current: 1-2 mos. e) Train users: 1-3 mos. (Total: 16-25 mos.)	Concurrent with other projects below	72	$ 48k	$ 80k
1.1.2.2	Identif'n.of Teacher Characteristics Acceptable to Minority Students	1.2.2: Identifying Desirable Behaviors 1.2.3: Improve Qualifying Data Approaches 1.3, 1.4, and 1.5	✓		Teacher Trainers, Minority Students & Communities	a) Summary info: 1 mo. b) Develop plans & instruments: 4 mos. c) Select schools: 1 mo. d) Data gathering: 8 mos. e) Eval. & Report: 5 mos. f) Disseminate info: 1 mo. (Total: 20 mos.)		84	$210k	$310k
APPROACH 1.2: SELECTION										
1.2.1.1	Develop Measures to Determine Educational Values	Approach 1.6	✓		Teachers, Principals, Superintendents, Trainers, Parents	a) Scaling of values & establishing reliability b) Test relationship to teaching outcomes (1 yr. min.) c) Compare results in successive settings			$ 40k	$ 45k
1.2.3.1	Improve Procedures for Conducting Interviews	1.2.2: Identifying Desirable Behaviors 1.2.3: Improve Qualifying Data	✓		Personnel Directors	a) Identify instructional treatment: 2-4 mos. b) Develop simulation situation: 4-6 mos. c) Conduct experiment on interview content & non verbal cues: 1-2 mos. d) Analysis & report: 3-5 mos. (Total 10-17 mos.)	After: 1.2.1, 1.2.2, 1.2.3 Before: 1.2.4	48	$ 37k	$ 61k
1.2.3.5	Synthesize & Validate Teacher Selection Measures	Draw on Measures Devised in Panels 2-6, and on Validation in Panels 7-10.	✓		School Administrators, Teacher Educators	a) Select sample of diverse teacher candidates, collect assessment & criterion performance data: 12 mos. b) Generate rules for synthesized profiles: 6 mos. c) Test profiles vs. perf. for half of sample: 12 mos. d) Revise rules: 3 mos. e) Re-test revised profiles: 6 mos. f) Test revised rules on 2nd half of sample: 12 mos. g) Final report: 3 mos. (Total: 54 mos.)	Phase a depends on 1.2.1.1 Other phases draw on 1.2.1 & 1.2.3, & lead to 1.2.4.1 &1.2.3.6		$180k	$195k

PANEL 1 APPENDIX: SUPPLEMENTARY PROJECT INFORMATION (p.2)

Project No.	Short Title	Related Programs	Signif.to Approach Objective: Critical	Signif.to Approach Objective: Contrib.	Target Group	Phases & Time Frame	Sequence re Other Projects	Man Months	Pers. Costs	Total Costs
APPROACH 1.2: SELECTION (Continued)										
1.2.3.6	Develop Performance Measures for Teacher Selection	1.2.3: Improve Qualifying Data Panels 2-5: Teacher Skills	√		Personnel Directors	a) Survey data on teacher effectiveness b) Supplement with job analyses c) In concert with concerned professionals, identify competencies d) Develop performance/rating instrument e) Establish inter-rater reliability on sample f) Validate against subsequent job performance	Concurrent with research on pupil outcomes & diff. staffing		Min. $ 20k per behav. measure	Min. $ 25k per behav. measure
1.2.4.1	Use EDP to Summarize Info on Tchr. Applicants	1.2.1: Specifying Student Outcomes 1.2.2: Identifying Desirable Behaviors 1.2.3: Improve Qualifying Data 1.6.2: Teacher Decisions on Position Change Approach 1.4		√	Teacher Placement Offices, School Personnel Offices, Professors of Educ.Admin.	a) Collect info on personnel decision strategies: 4-6 mos. b) Develop procedures for transferring info to EDP: 6-8 mos. c) Develop optimal scanning formats: 2-4 mos. d) Develop computer programs for obtaining specified summary output formats: 4-6 mos. (Total 16-24 mos.)	Concurrent with other programs, but modifiable on basis of new info	60	$ 70k	$113k
APPROACH 1.4: PLACEMENT										
1.4.1.1	Compare Outcomes from Schools that Build on the Community Culture vs. Standardized Curricula	1.1.2: Design of Recruitmt. Programs 1.2.1: Specifying Student Outcomes Approach 1.3 Panels 3, 5, 7, and 8		√	Minorities (e.g.,Indian), Developers of Teacher Training Products	a) Obtain info on culture-related schools: 1 mo. b) Design instruments and teacher training program: 5 mos. c) Select participating schools: 4 mos. d) Implement training program: 6 mos. e) Gather data: 37 mos. f) Analyze and report results: 12 mos. (Total 65 mos.)	Tie in to timing of Indian Educ.Act of 1972. (Start 2nd quarter FY 1975)	325	$400k	$500k
APPROACH 1.5: INSERVICE EDUCATION & SUPERVISION										
1.5.1.1	Develop Teacher Understanding of Own Cognitive Style as it Relates to Students	1.1.2: Design of Recruitmt. Programs 1.2.2: Identifying Desirable Behaviors 1.4.2: Design Orientation Programs Approach 1.6 Panels 2,4,5.		√	Teacher trainers, Local administrators	a) Identify teacher styles and student responses; design instruments and protocol materials: 12 mos. b) Conduct on-site studies: 4-6 mos. c) Analysis & report: 4-5 mos. (Total 20-23 mos.)			$150k	$185k
1.5.2.3	Conducting Evaluation Conferences with Teachers	Approaches 1.2 and 1.6.		√	Teachers, Teacher Trainees	a) Identify feedback strategies: 4-6 mos. b) Develop simulation situation: 6-8 mos. c) Conduct simulated conferences: 1-3 mos. d) Refine strategies: 2-4 mos. e) Field tryout: 4-6 mos. f) Assess results: 3-5 mos. (Total 20-32 mos.)	Concurrent with 1.5.1 & Approach 1.2 Precedes Approach 1.6	99	$ 76k	$121k

CAUTIONARY NOTE: The choice of projects for which supplementary information was developed was dependent more on relative panel workloads and time allowances than on the importance of the project. Furthermore, the above information is presented only with the understanding that these specifics were hurried, speculative estimates. A more thorough analysis of any particular project could result in estimates which differ considerably from those included here for illustrative purposes only.

NATIONAL PLANNING CONFERENCE ON STUDIES IN TEACHING

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1. Teacher Recruitment, Selection, & Retention

Chair: James Deneen, ETS
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2. Teaching as Human Interaction

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Graham Nuthall, U. Canterbury, New Zealand
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3. Teaching as Behavior Analysis

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Sec.: Judith Jenkins, U. Kansas

4. Teaching as Skill Performance

Chair: Richard Turner, Indiana U.
Members: Walter Borg, Utah State U.
Carl A. Grant, U. Wisconsin
Judy Henderson, Michigan State U.
Bruce Joyce, Stanford U.
Eugenia Kemble, UFT
Frederick McDonald, ETS
Bernard McKenna, NEA
Alan Purves, U. Illinois
Charles Stewart, Detroit Publ. Sch.
Beatrice Ward, Far West Laboratory for Educational R&D
Sec.: Mary Ella Brady, Indiana U.

5. Teaching as a Linguistic Process in a Cultural Setting

Chair: Courtney Cazden, Harvard U.
Members: Douglas Barnes, U. of Leeds, England
Arno Bellack, Columbia U.
Heidi Dulay, SUNY at Albany, N.Y.
Ian Forsyth, Center for Language in Primary Educ., London
John Gumperz, U. Calif. at Berkeley
William Hall, Rockefeller U.
Roger Shuy, Georgetown U.
B. O. Smith, U. of South Florida
Alan Tindall, SUNY at Buffalo, N.Y.
Sec.: Elsa Bartlett, Rockefeller U.

6. Teaching as Clinical Information Processing

Chair: Lee Shulman, Michigan State U.
Members: Thomas Good, U. Missouri
Edmund Gordon, Columbia U.
Philip Jackson, U. Chicago
Marilyn Johnson, San Jose Unified Sch. District, Calif.
Sara Lightfoot, Harvard U.
Greta Morine, Calif. State U. at Hayward
Ray Rist, Portland State U., Oregon
Paul Slovic, Oregon Research Institute
Bernard Weiner, U. Calif. at Los Angeles
Sec.: Ronald Marx, Stanford U.

7. Instructional Personnel Utilization

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Elizabeth Cohen, Stanford U.
Walter Hodges, Georgia State U.
Ruth Jones, Baskerville Sch., Rocky Mount, N.C.
Joseph Moren, Hibbing H.S., Minnesota
James O'Hanlon, U. Nebraska
John Prasch, Supt. of Schools, Lincoln, Neb.
Richard Schmuck, U. Oregon
Sec.: Linda Douglas, Lincoln Publ. Sch., Neb.

8. Personnel Roles in New Instructional Systems

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Catherine Barrett, Syracuse Publ. Sch., N.Y.
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Gerald Faust, Brigham Young U.
Robert Gagné, Florida State U.
Barbara Goleman, Miami/Dade Co. Publ. Sch., Fla.
Melvin Leasure, Oak Park Publ. Sch., Michigan
Gaea Leinhardt, U. Pittsburgh
Harold Mitzel, Pennsylvania State U.
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9. Research Methodology

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10. Theory Development

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